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Joseph R. Kelly
WESTMAN CHAMPLIN & KELLY
International Centre - Suite 1600
900 South Second Avenue
Minneapolis, MN 55402-3319

EXAMINER

PORTKA, GARY J

ART UNIT	PAPER NUMBER
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2188

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/894,821
Filing Date: June 28, 2001
Appellant(s): HAINES ET AL.

Alan G. Rego
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed September 22, 2004.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct. However, after further consideration by the Examiner an updated status of the claims is as follows:

This appeal involves claim 9.

The rejection of Claims 1-2, 10 and 20 has been withdrawn.

Claims 2-8 are allowed.

Claims 10-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is substantially correct. The changes are as follows: The rejections with respect to claims 1-2, 10, and 20 have been withdrawn. Accordingly, the only issue is whether claim 9 is patentably distinguishable over the combined teachings of Krantz and Berning.

(7) Grouping of Claims

Appellant's statement in the brief regarding grouping of the claims is moot because at this point, only claim 9 remains under appeal.

(8) Claims Appealed

The copy of the appealed claim contained in the Appendix to the brief is correct.

(9) Prior Art of Record

6,530,000	KRANTZ et al.	09-2003
6,038,619	BERNING et al.	03-2000
5,659,713	GOODWIN et al.	08-1997

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Krantz et al., U.S Patent 6,530,000 B1, in view of Berning et al., U.S. Patent 6,038,619, and Goodwin et al., US Patent 5,659,713 (as evidentiary support for streaming data requiring sequential access).

As to claim 9, Krantz discloses *a method of managing a data buffer* (118, Figs. 1-4), *comprising receiving a traversal request to traverse the data buffer* (see col. 2 lines

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14-16 and 37-43; requests submitted by an accessing unit during its continuous access duration are considered a traversal request), *arbitrating for ownership of the data buffer* (see col. 1 lines 48-55 and 63-67; arbitrating for access to the buffer is equal to the claimed limitation of arbitrating for ownership of the buffer), and *traversing all entries of the data buffer, beginning at an entry point in the buffer, corresponding to the traversal request, prior to voluntarily relinquishing ownership of the buffer* (see col. 5 lines 1-20; all entries are traversed since the traversal request is considered to be all accesses made by an accessing unit during the time the buffer is available to it, it is noted that the claim states "all entries ... corresponding to the traversal request", the buffer is voluntarily relinquished when the access time expires, or when all requests by a unit have been made – col. 2 lines 37-43). See also Krantz Abstract, Figs. 1-4, col. 1 lines 55-60, and col. 2 lines 5-7. Krantz does not explicitly disclose that sequential entries are traversed. However, Berning teaches an analogous disk buffer and control in which when requests for sequential entries are detected, allows the requester to continue to stream data unabated through the buffer. See Berning Abstract, col. 3 lines 25-40. This is desirable because it improves overall data throughput of the buffer. See Berning col. 2 lines 64-67 and col. 3 lines 8-24. Goodwin et al., col. 2 lines 29-33 is cited as evidence that streaming of data is defined as sequential accesses. The teaching of allowing the traversal of sequential entries unabated as applied to Krantz is equal to the recited traversal of entries prior to de-arbitrating. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to traverse sequential entries prior to de-arbitrating, because this was a known means of improving buffer throughput.

(11) Response to Argument

The rejection of claims 1 and 2 was withdrawn because after further review, Examiner could not identify in the references an item equal to the recited traversal component, that receives a requested traversal, arbitrates for ownership of the buffer, and traverses sequentially mapped entries in the buffer. The rejection of claim 10 was withdrawn because after further review Examiner could not identify where the references disclosed receiving a buffer starting address and number of locations to complete a traversal. The rejection of claim 20 was withdrawn because Appellant's arguments at page 8-9 of the brief make it clear that the means-plus-function language of this claim includes the structure at Figure 2 including arbitrated buffer and traversal component, and receiving, arbitrating for ownership, and traversing sequentially mapped entries.

The Examiner contacted the Appellant's attorney to suggest combining claim 9 with either claim 10 or 11, but was informed that Appellant wanted to proceed with the appeal on claim 9.

It is first noted that while Appellant apparently only makes two brief arguments with regard to claim 9 (at page 7 of the brief), other arguments made, as may be applicable to claim 9, are also responded to herein.

Appellants state at page 5 first paragraph of the brief that the final Office action stated that "Krantz does not disclose a traversal component configured to traverse sequentially mapped entries in an arbitrated buffer memory". This is incorrect, the action stated that Krantz teaches traversing entries in an arbitrated buffer memory, and

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only lacks an explicit teaching that these entries are "sequentially mapped". It is noted that the term "traversal" itself does not denote any significance of sequential or contiguous entries. Also, "traversal request" does not signify whether it may be a single, or a plurality of requests. Appellant's own statements at page 2 second to last paragraph of the brief describe a traditional traversal that must re-arbitrate for access to each next location, and thus consequently provides support that a "traversal request" may be properly interpreted as a plurality of access unit requests. It is further noted that the limitation "sequentially mapped" is no longer an issue since it does not appear in claim 9, only "sequential" does.

Appellants state at page 5 third paragraph of the brief that Berning deals with consecutive requests to the disk, not to the buffer. Examiner agrees that Berning deals with consecutive accesses to the disk, but as further argued hereinbelow maintains that Berning also deals with consecutive accesses to the buffer. Appellants state at page 5 second paragraph, and at page 6, first full paragraph, that the Examiner's prior statement that the "teaching of allowing the traversal of sequential entries unabated as applied to Krantz is clearly equal to the recited traversal of entries prior to de-arbitrating" is incorrect and that the statement "the description that this data is 'streamed' through the buffer necessarily includes that sequential data is consecutively accessed in the buffer" is a conclusory statement, and an inherency argument. First, it is noted that Krantz provides for a continuous access duration for a particular accessing unit (as noted by Appellant at page 3 first full paragraph of the brief). This access duration provides a plurality of buffer accesses which may be considered a traversal, and

although it is entirely possible that this duration of accessing a plurality of buffer locations might be to sequential locations, Krantz does not explicitly state this. Berning teaches that in accessing sequential locations on a disk, "a circular buffered data path between a cyclic tracked medium and a device interface can continue data streaming unabated" (see Berning col. 7 lines 1-7, which further recognize the possibility not unlike Appellants own indication of the prior art, that the path would need to be disabled and reconnected for a random sequence of requests). Streaming of data through a buffer means sending the data in one end and out the other, *in order*. It is noted that it was in response to the final rejection that Appellants first argued that the statement "streaming data through a buffer means data is consecutively accessed" is an inherency argument. As evidence of the meaning of streaming data through a buffer, Examiner herein cites column 2 lines 29-33 of Goodwin et al., US Patent 5,659,713, which explicitly states that a stream is sequential reads. To assume that Berning did not consecutively access sequential data in the buffer would be a misinterpretation of what it means to stream data through a buffer. Therefore, the Examiner maintains that this teaching (of Berning) of improving a sequential disk access performance, by unabatedly sequentially accessing data in a circular buffer, in combination with the teaching (of Krantz) of providing an access "window" duration for an arbitrated buffer, teaches the invention recited in claim 9.

Appellants argue at page 7 of the brief regarding claim 9, and also in the first full paragraph at page 9 regarding claim 20, that "Krantz teaches or suggests nothing about accessing entries in the data buffer". This statement is incorrect, the first sentence of

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the Abstract of Krantz describes arbitration of access to a buffer. Appellants argued at page 7 of the brief regarding claim 9, and also in the first full paragraph at page 9 regarding claim 20, that "Berning teaches or suggests nothing about traversing all sequential entries in the data buffer". It is noted that the claims do not require traversing "all sequential entries in the data buffer", only as recited in claim 9 all sequential entries in the data buffer *corresponding to the traversal request*. As previously noted hereinabove, a "traversal request" as recited might be considered a single access request, or a plurality of access requests, and therefore all entries of the traversal request are by definition traversed.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,



Gary J Portka
Primary Examiner
Art Unit 2188

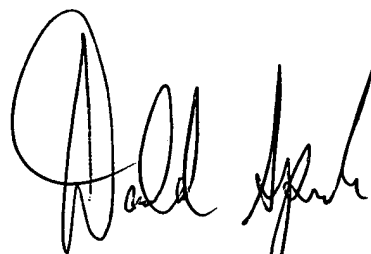
November 29, 2004

Conferees



MANO PADMANABHAN
SUPERVISORY PATENT EXAMINER

Mano Padmanabhan
Supervisory Patent Examiner
Art Unit 2188



DONALD SPARKS
SUPERVISORY PATENT EXAMINER

Donald Sparks
Supervisory Patent Examiner
Art Unit 2187

Joseph R. Kelly
WESTMAN CHAMPLIN & KELLY
International Centre - Suite 1600
900 South Second Avenue
Minneapolis, MN 55402-3319